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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

This action is in response to applicant's response filed on 1/18/08. Claims 12-19, 44-55 are now pending in the present application. **This action is made final.**

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims **12-19, 44-55** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claims **12, 44, 50**, the claims recite a "wireless local input interface". However, the claimed "wireless" feature is never described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Accordingly, this is a new subject matter.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims **12-17, 19, 44-45, 47, 50-51, 55** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Lorang et al** (US 5,548,814) in view of **Chadwick** (US **5,168,271**).

Regarding claim **12**, **Lorang** discloses a broadcast transmitter (see Fig. 8, base station 200 or Fig. 5 regarding paging stick 20), comprising:

an input-output controller (Fig. 3, ref. 72) coupled to a wireless satellite input interface (see col. 9, lines 50-52 regarding satellite receiver) and to a buffer memory 78 (see Fig. 3 and col. 6, lines 40-58), wherein one skilled in the art would recognize that the base station 200 would comprise components similar to the components of the LAN 38 in order to receive data and re-transmit data to the PDUs;

a control processor (Fig. 3, ref. 72) coupled to said input-output controller and to a local input interface (see col. 9, lines 56-58 regarding connections to PSTN/PDN and col. 7, lines 5-8 regarding COM 84), wherein it would have been obvious to one skilled in the art at the time the invention was made to modify **Lorang** to utilize a wireless connection for eliminating a need of a cable connection;

a precision time base coupled to said control processor (an inherent component in order to provide clock signals to the processors and/or oscillators for operating the transmitter device, see also col. 9, lines 58-67);

an encoding engine coupled to said input-output controller, said control processor, and to a first memory (see Fig. 10 regarding baseband processor components of a Rx/Tx device), wherein one skilled in the art would recognize that the transceiver of the base station 200 would obviously comprise components similar to the transceiver components of the PDU in order to encode data for transmitting encoded data to the PDUs; and

a subcarrier signal generator, coupled to said encoding engine, said control processor, a second memory, and to a subcarrier output (see col. 7, lines 9-11 noting for the Rx/Tx device and see Fig. 10 regarding baseband processor components of the Rx/Tx device).

Here, although **Lorang** is silent with a subcarrier generator, it is noted that since **Lorang** suggests using standard paging FM architecture for the Rx/Tx device's communication mode (see col. 10, lines 53-64), and since the standard paging FM architecture uses FM subcarrier signals for modulation, it is clear that **Lorang** would obviously suggest FM subcarrier signals as disclosed by **Chadwick** (see Fig. 2). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify Lorang to incorporate an encoder and FM subcarrier signals for modulation as taught by **Chadwick**, for utilizing advantages of FM subcarrier communication protocol such as low power transmission.

Regarding claim **13**, **Lorang** discloses the control processor includes at least one of a microprocessor, microcontroller, programmable logic array, programmable gate

array, and an ASIC as claimed (see Fig. 10 regarding baseband processor components of the Rx/Tx device).

Regarding claim **14**, it would have been obvious to one skilled in the art at the time the invention was made to modify Lorang to utilize field-programmable gate array for the input-output controller, for utilizing advantages of the field-programmable gate array such as low cost, fast turn around (i.e, designs can be placed on an FPGA in typically a few minutes).

Regarding claim **15**, **Lorang** discloses the first input interface further comprises at least one of an R5-422 interface, an R5-232 interface, an IEEE-1394 interface, a USB interface, or an Ethernet interface as claimed (see col. 6, lines 60-61).

Regarding claim **16**, it would have been obvious to one skilled in the art that the Ethernet interface as disclosed by Lorang (see col. 6, lines 60-61) could also be used for the second interface (84) as well, for interfacing to the PSTN/PDN network (see col. 7, lines 4-8).

Regarding claim **17**, since the use of 1-ppm oscillator as a precision time base is well known in the art, it would have been obvious to one skilled in the art at the time the invention was made to modify Lorang to provide a 1-ppm oscillator for the precision time base as claimed, for utilizing advantages of this standard 1-ppm oscillator such as cost.

Regarding claim **19**, it would have been obvious to one skilled in the art at the time the invention was made to modify Lorang to utilize field-programmable gate array for the modulator, for utilizing advantages of the field-programmable gate array such as

low cost, fast turn around (i.e, designs can be placed on an FPGA in typically a few minutes).

Regarding claim **44**, it is rejected for the same reason as set forth in claim 12 above regarding the FM subcarrier signal generator. In addition, **Lorang** as modified would disclose data source with formatted data (see source PC 48 in Fig. 11 and col. 5, lines 15-21), a mobile device that is configured to receive data in a broadcast mode and a localcast mode (see Fig 11 and col. 12, lines 42-45), and that the FM subcarrier baseband signals is transmitted to the mobile device in accordance with a predetermined schedule (see col. 4, lines 60-62 and col. 5, lines 20-21), such that the mobile device receives the FM subcarrier baseband signals when in the broadcast mode (see Fig 11 and col. 12, lines 42-45).

Regarding claim **45**, it is rejected for the same reason as set forth in claim 44 above. In addition, as admitted by applicant in [0036], a High-Level Data Link Control (HDLC) protocol is a standardized, bit oriented, switched and non-switches protocol, and can be found in ISO standards such as ISO 3309 or ISO 4335. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify Lorang to utilize a HDLC protocol as claimed, for utilizing advantages of a standardized protocol such as popularity and cost.

Regarding claim **47**, it is rejected for the same reason as set forth in claim 12 above. In addition, **Lorang** as modified would disclose the encoded data corresponds to an output image resulting from the means for encoding hashing (or interleaving) and

placing packets within a frame received as the formatted data (see **Chadwick**, Fig. 2 and col. 4, line 51 – col. 5, line 6).

Regarding claim **50**, the claim is interpreted and rejected for the same reason as set forth in claim 48 above. In addition, **Lorang** as modified would disclose commands (i.e, specified time and frequency of the message, see Lorange col. 5, lines 20-21), hashing (or interleaving, see Chadwick, Fig. 2), filtering and amplifying (see Lorange, Fig. 12). As to the claimed limitation regarding the time-diversity stages, it is noted that the use of a transmit diversity is well known in the art (i.e, frequency diversity, space diversity, coded diversity, etc). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify Lorange to transmit the message with time-diversity stages as claimed, for reducing/minimizing signal reception errors caused by fading.

Regarding claim **51**, the claim is interpreted and rejected for the same reason as set forth in claim 45 above regarding the HDLC protocol.

Regarding claim **55**, the claim is interpreted and rejected for the same reason as set forth in claim 50 above. In addition, **Lorang** as modified would disclose the subcarrier signal generator is further arranged to modulate data corresponding to the output image utilizing quadrature phase shift keying (see Chadwick, Fig. 2 regarding DQPSK modulator 130).

5. Claim **18** is rejected under 35 U.S.C. 103(a) as being unpatentable by **Lorang** in view of **Chadwick**, and further in view of **Cox** (US **5,732,333**).

Regarding claim **18**, **Lorang** as modified would disclose the subcarrier signal generator is further comprised of a modulator (see modulator 130 in Fig. 2 of Chadwick), and an output filter (see filter 336 in Fig. 10). Although Lorang as modified is silent on a digital-analog converter, it is noted that since the modulator data are digital data, it is clear that a digital-analog converter would be needed in order generate a carrier analog signal for RF transmission as disclosed by **Cox** (see D/A 112 in Figs. 1 and 2). Therefore, the claimed imitation regarding a digital-analog converter is made obvious by Lorang and Cox, in order to generate a carrier analog signal.

6. Claim **46** is rejected under 35 U.S.C. 103(a) as being unpatentable by **Lorang** in view of **Chadwick**, and further in view of **Campana** (US **6,567,397**).

Regarding claim **46**, it is rejected for the same reason as set forth in claim 44 above. In addition, since the use of a wildcard value in the address field to enable deliver of data to a group of receivers is well known in the art as disclosed by **Campana** (see col. 2, lines 60-61), it would have been obvious to one skilled in the art at the time the invention was made to modify Lorang to create an address field corresponding to the formatted data, such that wildcard values inserted into the address field, to enable deliver of data to a group of paging receivers, thereby allow fewer channels to handle multiple broadcast transmitters (i.e, a single channel can be used to broadcast a message to a plurality of receivers).

7. Claims **48-49, 52-53** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Lorang** in view of **Chadwick**, and further view of **Weng** (US **4,856,003**).

Regarding claim **48**, it is rejected for the same reason as set forth in claim 44 above. In addition, it would have been obvious to one skilled in the art at the time the invention was made to modify **Lorang** to split the formatted data into a first stream and a second stream, interleave bits from the first stream with bits from the second stream into separate segments, and merge the segments in producing the encoded data as disclosed by **Weng** (see col. 2, lines 27-47), for error correction (ECC or Forward-error-correction FEC) purpose.

Regarding claim **49**, the claim is interpreted and rejected for the same reason as set forth in claim 48 above. In addition, **Lorang** as modified would disclose encoding the formatted data is further arranged to divide the merged segments into predetermined segments wherein in each segment corresponds to a predetermined number of symbols, such that the encoded data is produced (see **Weng**, col. col. 2, lines 27-47).

Regarding claims **52-53**, the claim is interpreted and rejected for the same reason as set forth in claims 48-49 above.

8. Claim **54** is rejected under 35 U.S.C. 103(a) as being unpatentable by **Lorang** in view of **Chadwick**, and further in view of **Misaizu** (US **5,487,089**).

Regarding claim **54**, the claim is interpreted and rejected for the same reason as set forth in claim 50 above. In addition, since **Lorang** as modified would disclose the subcarrier signal generator is further arranged to modulate data corresponding to the

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output image utilizing quadrature phase shift keying (see Chadwick, Fig. 2 regarding DQPSK modulator 130), and since the QPSK modulator that modulates data correspond to symbol by symbol under the transmit clock timing is known in the art as disclosed by **Misaizu** (see col. 8, lines 1-5 and col. 9, lines 1-15), the claimed limitation is made obvious by Chadwick and Misaizu, so that the symbol can be modulated and transmitted in a frame according to transmitting timeslots.

Response to Arguments

9. Applicant's arguments filed 1/18/08 have been fully considered but they are not persuasive.

In the response filed 1/18/08, Applicant contends that

Claims 12-19, 44-55 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The Office Actions states "As to claims 12, 44, 50, the claims recite a 'wireless local input interface'. However, the claimed 'wireless' feature is never described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention." (Office Action, page 2). The Applicants respectfully disagree. With reference to Figure 3, as described in the specification at page 9, lines 20-21, Figure 3 shows a broadcast transmitter 103. As is also described, "The broadcast transmitter 103, at any given time, has two data arrays that it manages. One is the output FM sub carrier frame image 501 (see in FIGURE 5 and is described below)The other data array is the satellite input buffer." (Specification, page 9, lines 27-30). Additionally, the "wireless" feature is shown in Figure 1. As is seen in Figure 1, the broadcast transmitter interfaces with a satellite and a **watch** 101 through wireless signals. Therefore, both a wireless local and satellite input interface are described. Since both wireless interfaces are shown, the Applicants respectfully request the rejection be withdrawn.

In response, the examiner notes that the broadcast transmitter would **not** receive wireless **input** from the watch as argued by Applicant. In fact, according to the specification, the watch receives output broadcast from the broadcast transmitter, and the control port 315 in Fig. 3 is used to receive local command and set up via interfaces

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such as RS-422, USB or Ethernet (see [0039]). Therefore, the above 112 rejection still maintained and repeated in this Office Action..

Applicant further contends that

Lorang, however, teaches two separate components. With reference to Figure 1 of Lorang, a personal information service is shown. The personal information service includes a paging stick 20 that is coupled to a PDU 10. The PDU 10 is coupled to a LAN 38 through a personal computer PC 40 and a wireless LAN adapter 44. See, for example, Lorang col.4 lines 1025 for a description of these connections in the personal information service shown in Figure 1.

Accordingly, the LAN 38 and the paging stick 20 are two separate components. Details of these two separate components are described in Lorang. For example, the LAN 38 is shown in Figure 3 and a paging stick 200 is shown in Figure 8. Because these are separate components, *the processor 72 of the LAN 38 is not coupled to the satellite interface 22 of the paging stick 200.*

In response, the examiner notes that Applicant has misread the rejection, Figs. 5 and 8 clearly shown the paging stick 20 or base station 200 would have two input interfaces, a wireless satellite input interface and a local (i.e, PSTN/PDN) input interface. However, since details of the paging stick 20 or base station 200 are not shown, Fig. 3 are used because the LAN or the paging stick 20 or base station 200 would obviously have similar components, where all of them would receive a wireless input or a local input, an encoder for encoding an input data and a transmitter for transmitting the encoded data to the PDU unit.

Applicant further contends that

Similarly, the internal components of the LAN 38 cannot be modified to work within the paging stick 20 as is suggested by the Office Action. For example, the Office Action states that "an input-output controller (Fig. 3, ref. 72) coupled to a wireless satellite input interface" and that "a control processor (Fig. 3, ref. 72) coupled to said input-output controller and to a local input interface." That is, the Office Action states that reference 72 is both an "input-output controller" and is a "control processor." This would require reference 72 to couple to itself.

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This is inconsistent. The processor 72 cannot be both an input-output controller and a controller processor. Further, the processor 72 cannot be an input-output controller that is coupled to a controller process when the processor 72 is also the controller. This is also inconsistent. A single component cannot be both two components when each of those components has different connections.

In response, Fig. 3 clearly shows the control processor 72 is coupled to "input/output controllers" such as refs. 76, 78, 74, 84, 80. In fact, the control processor would have an "input/output controller" by itself in order to read or write data with other I/O ports. Further, it would have been obvious to one skilled in the art to either integrate controllers into a single component or separate controllers to several components as an obvious design choice, noting that it has been held that forming in one piece an article which has formally been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893), and constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichmena*, 168 USPQ 177, 179. Therefore, it would have been obvious to one skilled in the art to provide components with coupled connections as recited in the claim, noting that it has been held that rearranging parts of an invention involved only routine skill in the art. *In re Japikse*, 86 USPQ 70 (CCPA 1950).

For foregoing reasons, the examiner believes that the pending claims are not allowable over the cited prior art.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

11. **Any response to this final action should be mailed to:**

Box A.F.

Commissioner of Patents and Trademarks

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or faxed to:

(571) 273-8300 (for **formal** communications intended for entry)

(571)-273-7893 (for informal or **draft** communications).

Hand-delivered responses should be brought to Customer Service Window,
Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

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Any inquiry concerning this communication or communications from the examiner should be directed to Duc M. Nguyen whose telephone number is (571) 272-7893, Monday-Thursday (9:00 AM - 5:00 PM).

Or to Nay Maung (Supervisor) whose telephone number is (571) 272-7882.

/Duc M. Nguyen/

Primary Examiner, Art Unit 2618

June 10, 2008